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Eberhard Schoch

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EXAMINER

WILLIAMS, ARUN C

ART UNIT

PAPER NUMBER

2838

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/542,943	Applicant(s) SCHOCH, EBERHARD	
	Examiner ARUN WILLIAMS	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This is in response to an amendment/response filed on 12/29/2008

No claims have been amended.

Claims 1-10 have been cancelled on 7/20/2005.

No new claims added.

Hereon, claims 11-20 are currently pending; claims 11-20 are rejected.

Response to Arguments

Applicant's arguments with respect to claims 11-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

1. Claims 11,15,19,17,18,19, and 20 are objected to because of the following informalities: Claims, 11,15,19,17,18,19, and 20, the use of 'specified' is vague since it does not concretely defined the range/value. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Camp, Jr. et al.(Camp), USPATNO.(6,236,214)

As for claim 11, Camp discloses and shows in Figs.1- 11 a device for ascertaining an amount of charge that is able to be drawn from an energy storage unit, up to at least one specified cutoff threshold, comprising:

- a charge predictor (22) for calculating, in the case of a specified discharge current characteristic, the amount of charge that is able to be drawn from the energy storage unit (12), on the basis of a mathematical energy storage model that mathematically represents electrical properties of the energy storage unit; and
- an estimator (Fig.5, 120) for ascertaining at least one of state variables and parameters for the mathematical energy storage model, based on operating performance quantities of the energy storage unit (Abstract & col.4, lines 41-64)

As for claim 19, the method will be necessitated in view of the device as disclosed in the rejection of the claim above, since the structure recited in "Camp" is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977) and MPEP 2112.01.

According, claim 19 would have been inherent.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 12,13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Camp in view of Xia et al,(Xia), USNO.(2002/0120906)

As for claims 12,13, and 14, Camp discloses all limitations, but differs from the claimed invention because he does not explicitly disclose the mathematical energy storage model is a battery model that includes at least a mathematical model for an internal resistance, an acid diffusion resistance, and a charge transfer polarization

Xia discloses and shows in Fig. 1 the mathematical energy storage model is a battery model that includes a charge transfer polarization (par. [0185 & 0259-0322]). Furthermore, Xia discloses and shows in Fig. 7-8 the estimator ascertains at least an open-circuit voltage and a concentration polarization as the state variables (par.[0131 &

0136]). Furthermore, Xia discloses the estimator additionally ascertains a charge transfer polarization (par.[0122]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Camp by using a mathematical model for a charge transfer polarization and an estimator ascertains at least an open-circuit voltage and concentration polarization as the state variables and ascertains a charge transfer polarization for advantages such as providing the ability to predict operating conditions over a wide range (par.0013]), as taught by Xia.

7. Claims 15, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Camp in view of Xia and further in view of Okumura et al,(Okumura), USPATNO.(5,717,256).

As for claims 15,16, and 17, Camp in view of Xia discloses all limitations, but differs from the claimed invention because he does not explicitly disclose the charge predictor ascertains an amount of charge that is able to be drawn until a specified minimum electrolyte voltage that represents a first, second, and third cutoff criterion are reached.

Okumura discloses and shows in Fig. 1-3 & 17 the charge predictor (3) ascertains an amount of charge that is able to be drawn until a specified minimum electrolyte voltage that represents a first (V1), second (V2), and third (V3) cutoff criterion are reached (col.4-5 & col.13, lines 1-10)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Camp modified by Xia by using the charge

predictor ascertains an amount of charge that is able to be drawn until a specified minimum electrolyte voltage that represents a first, second, and third cutoff criterion are reached for advantages such as providing the ability to identify remaining battery capacity (col.12, lines 59-65), as taught by Okumura.

8. Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Camp in view of Xia and further in view of Tsuchida et al,(Tsuchida), USNO.(2002/0171455).

As for claim 18, discloses all limitations, but differs from the claimed invention because he does not explicitly disclose that a voltage predictor for ascertaining, as a function of a load current characteristic that is specified, a corresponding load voltage that arises on the basis of the specified load current characteristic

Tsuchida discloses a voltage predictor (ref's voltage detecting section) for ascertaining, as a function of a load current characteristic that is specified, a corresponding load voltage that arises on the basis of the specified load current characteristic (par.[0042-0043]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Camp in view of Xia by using a voltage predictor for ascertaining, as a function of a load current characteristic that is specified, a corresponding load voltage that arises on the basis of the specified load current characteristic for advantages such as providing the ability to execute a command signal irrespective of the impedance of the load (par.[0015]), as taught by Tsuchida.

As for claim 20, the method will be necessitated in view of the device as disclosed in the rejection of the claims above, since the structure recited in "Camp in view of Xia and further in view of Okumura/Tsuchida " is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977) and MPEP 2112.01.

According, claim 20 would have been obvious.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARUN WILLIAMS whose telephone number is (571)272-9765. The examiner can normally be reached on Mon - Thurs, 6:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on 571-272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2838

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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